TABLE 2.—*Free-air resultant winds (m. p. s.) during February, 1925*

Altitude, m. s. l. (m.)	Broken Arrow, Okla. (233 m.)				Drexel, Nebr. (396 m.)				Due West, S. C. (217 m.)				Ellendale, N. Dak. (444 m.)				Groesbeck, Tex. (141 m.)				Royal Center, Ind. (225 m.)			
	Mean		7-year mean		Mean		10-year mean		Mean		4-year mean		Mean		8-year mean		Mean		7-year mean		Mean		7-year mean	
	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surface	S. 81°E.	0.9	N. 20°W.	0.6	S. 55°W.	0.7	N. 67°W.	1.3	S. 81°W.	1.5	S. 89°W.	1.6	N. 43°W.	3.1	N. 43°W.	3.6	S. 36°W.	3.2	N. 76°W.	0.4	S. 50°W.	1.7	S. 81°W.	2.0
250	S. 74°E.	0.9	N. 24°W.	0.5					S. 83°W.	1.4	N. 89°W.	1.7					S. 40°W.	3.7	S. 68°W.	0.5	S. 50°W.	2.0	S. 77°W.	2.3
500	S. 17°E.	1.7	S. 85°W.	0.5	S. 63°W.	1.3	N. 74°W.	1.9	S. 80°W.	2.7	S. 87°W.	3.0	N. 49°W.	3.3	N. 48°W.	3.8	S. 42°W.	4.6	S. 42°W.	1.3	S. 48°W.	5.1	S. 66°W.	3.8
750	S. 41°W.	2.1	S. 63°W.	1.6	S. 84°W.	2.9	N. 71°W.	4.0	S. 79°W.	2.9	S. 80°W.	4.2	N. 61°W.	4.0	N. 55°W.	4.7	S. 53°W.	5.0	S. 51°W.	2.1	S. 58°W.	6.9	S. 68°W.	5.5
1,000	S. 70°W.	1.9	S. 70°W.	2.4	N. 83°W.	4.1	N. 66°W.	5.1	S. 86°W.	3.6	S. 80°W.	5.3	N. 64°W.	5.0	N. 43°W.	5.2	S. 63°W.	5.5	S. 63°W.	3.3	S. 65°W.	8.1	S. 73°W.	6.8
1,250	S. 82°W.	3.1	N. 88°W.	3.5	N. 84°W.	5.3	N. 66°W.	6.5	S. 84°W.	4.6	S. 81°W.	6.7	N. 68°W.	6.3	N. 55°W.	6.3	S. 77°W.	5.8	S. 74°W.	4.3	S. 67°W.	8.6	S. 81°W.	7.8
1,500	N. 85°W.	3.9	N. 81°W.	4.3	N. 78°W.	6.1	N. 66°W.	8.1	S. 88°W.	6.4	S. 84°W.	8.6	N. 71°W.	7.2	N. 59°W.	7.4	S. 84°W.	6.4	S. 80°W.	5.7	S. 75°W.	10.3	S. 86°W.	9.3
2,000	N. 86°W.	6.4	N. 77°W.	6.5	N. 81°W.	10.0	N. 69°W.	10.4	S. 84°W.	8.7	S. 86°W.	11.9	N. 68°W.	10.6	N. 62°W.	9.6	N. 85°W.	6.6	S. 86°W.	7.3	S. 77°W.	13.2	S. 89°W.	11.3
2,500	N. 88°W.	7.4	N. 76°W.	7.4	N. 87°W.	12.8	N. 70°W.	12.7	S. 67°W.	8.4	S. 83°W.	13.4	N. 67°W.	12.4	N. 64°W.	11.7	S. 76°W.	8.2	S. 88°W.	8.5	S. 64°W.	16.2	W.	13.7
3,000	N. 72°W.	6.5	N. 78°W.	9.7	N. 87°W.	14.3	N. 75°W.	14.4	S. 74°W.	10.2	S. 85°W.	15.4	N. 73°W.	13.7	N. 66°W.	13.0	S. 72°W.	9.8	S. 87°W.	10.4	S. 60°W.	17.3	S. 89°W.	14.6
3,500	N. 66°W.	10.0	N. 65°W.	10.7	N. 87°W.	15.4	N. 74°W.	15.8	N. 64°W.	10.3	N. 82°W.	16.3	N. 70°W.	15.4	N. 69°W.	12.9	S. 75°W.	10.6	N. 89°W.	11.2	S. 63°W.	17.0	N. 88°W.	17.2
4,000	N. 84°W.	12.5	N. 69°W.	10.7	S. 81°W.	16.1	N. 80°W.	15.9	N. 66°W.	12.0	N. 85°W.	11.6	N. 70°W.	17.1	N. 66°W.	14.1	S. 57°W.	17.2	N. 89°W.	12.3	S. 38°W.	17.7	S. 88°W.	16.2
4,500	S. 86°W.	12.5	N. 61°W.	11.9	S. 89°W.	21.5	N. 84°W.	17.6					N. 75°W.	20.2	N. 66°W.	15.4	S. 67°W.	18.0	N. 79°W.	12.8	S. 45°W.	20.9	W.	16.9
5,000	S. 87°W.	13.4	S. 74°W.	12.1	W.	20.0	N. 83°W.	16.8					N. 45°W.	17.0	N. 87°W.	17.2								

THE WEATHER ELEMENTS

By P. C. DAY, In Charge of Division

PRESSURE AND WINDS

The first few days of February, 1925, brought important pressure variations and consequently sharp changes in temperature, particularly along the northern boundary and over the southern districts of Canada, where locally the lowest and highest temperatures of the month were recorded within 24 hours, the changes amounting to as much as 60° within the same period.

Immediately following, however, pressure assumed a more stable condition and weather changes were less marked until the beginning of the second decade, when cyclonic conditions overspread the districts from the Mississippi River eastward, attended by considerable rain or snow. This was immediately followed by an anticyclone which, though not producing marked low temperatures over northern districts, nevertheless favored an extension of freezing temperatures into the Southeastern States and notably over the Florida Peninsula, where on the 12th and 13th they occurred over the greater part of the State, though they continued for too short a period to cause serious damage save to the more tender forms of vegetation.

During the latter half of the month no important cyclones or anticyclones crossed the country until early in the last decade, when a cyclonic area that first appeared over the far southwest on the 21st attained considerable proportions by the morning of the 23d. At this time it covered an extensive area from the middle Mississippi Valley northeastward to the lower Lakes, and precipitation, mostly rain, had occurred over a wide area from the Great Plains eastward to the Appalachian Mountains, with local heavy falls in portions of the Mississippi and Ohio Valleys. During the following 24 hours the storm moved rapidly northeastward, attended by rains over most eastern districts, though the falls were mainly unimportant.

During the last few days of the month a cyclonic area moved eastward along the northern border from Montana to New England, becoming of considerable importance over the Great Lakes and thence to New England on the 26th and 27th. The precipitation attending this storm was mostly in the form of snow, some heavy falls being reported on the Canadian side of the border. High winds accompanied this storm from the lower lakes eastward to the coast, and considerably colder weather with high barometric pressure followed.

Anticyclones were mainly of far less importance than those usually experienced during a winter month. Those materially influencing the temperature over considerable areas were as follows: From the 1st to 3d, along the northern border from the Rocky Mountains eastward, that of the 11th to 13th bringing decidedly cold weather over the Southeastern States; and another near the end of the month that brought sharp falls in temperature from the northern Rocky Mountains eastward to New England.

In the far Western States moderate cyclonic conditions persisted during the first decade but were principally confined to the more northern districts. The second decade was comparatively free from storms of any character. The first half of the third decade had moderately unsettled, stormy weather over the northern districts, but the closing days were under the influence of an anticyclone of material strength.

The pressure distribution for the month as a whole was distinctly favorable for warm and dry conditions in most parts of the country. The barometric gradient was mainly toward the north, the anticyclones tending toward the southern section, while the cyclones frequently moved eastward along the northern boundary.

The average pressure was well below normal over all parts of the country save over the southwest and extreme northeast sections, and it was distinctly below in the central and far northwestern districts, thus favoring prevailing southerly winds over the greater part of the country. These were particularly noticeable in the western districts, where, on account of local topography, there is usually great diversity in the directions of the prevailing winds, while during the month under discussion they were remarkably constant from southerly points.

High winds were infrequent, and over the Atlantic coast districts and the Great Lakes they were mainly confined to the cyclone of the 26th and 27th. No important areas over the interior and southern portions of the country were affected by high winds, and some stations reported the lowest wind movement of record for February.

TEMPERATURE

The chief feature of the weather for February, 1925, is the uniformly high temperature that prevailed over all portions of the United States, and Canada also, as far as observations disclose.

An examination of the temperature data for February during the past 50 years does not disclose a single case where the monthly means of temperature were above normal for all portions of both countries, the reference to Canada of course covering only the southern portions, as no weather-reporting stations with records now available are located in other parts of that country.

The nearest approach to the conditions that existed during February, 1925, was in 1921, when February mean temperatures were above normal in all parts of the United

States and over western and central Canada, but extreme eastern Canada had means slightly below normal. The month stands out prominently also as having in many cases the highest mean temperatures ever observed in February, and in other cases as having the highest individual temperatures ever reported in that month.

The uniformity of the temperature conditions is well illustrated in the fact that the daily means were above the normal each day of the month in several widely separated areas, while many others had only a day or two with temperatures below normal.

The departures of the mean temperature from the normal are graphically shown on Chart III.

The warmest periods of the month were not identical over extensive areas; in fact, the warmest dates ranged at intervals from the first to the 28th, though the principal dates were the 6th to 9th from the Missouri Valley eastward; about the 21st to 23d from Texas and Oklahoma eastward, and in some of the western Mountain States; and on the 28th in Arizona and Oregon.

The lowest temperatures were observed mainly from the 2d to 4th over the middle and northern Great Plains and thence eastward to the North Atlantic States; from the 8th to 11th in the western Mountain States; from the 11th to 13th over the East Gulf and South Atlantic States; and on the 27th and 28th over a considerable area from the Southern Plains northeastward to the Great Lakes and locally along the north Atlantic coast.

The lowest temperature observed during the month, 42° below zero, occurred in Minnesota, and temperatures below freezing occurred in all portions save the coast districts and southern portions of Florida, extreme southern Texas, and over the lower elevations and coast districts of Arizona and California. No important damage from frosts or freezing occurred, however, except in Florida and portions of nearby States, where tender vegetation was injured to some extent.

PRECIPITATION

While the precipitation over most sections of the country was sufficient for present needs, nevertheless the month as a whole was remarkably dry, and particularly so in the southern portions.

Over the Pacific coast States from central California northward the precipitation was mainly above normal, and was unusually heavy in some central coast and northern sections of California. In all other portions of the country, save in a few small areas, the precipitation was less than is usually received in the last winter month. From Texas eastward and northeastward to the Atlantic coast the deficiency ranged from 2 to nearly 4 inches, though on account of the heavy rains during the preceding month no serious drain upon the moisture supply resulted. Over the districts from the central portions of Oklahoma and Texas westward to southern California the drought of previous months continued and great need for more rain was being felt. In portions of New Mexico the lack of sufficient moisture has continued for more than a year, and in Arizona and southern California the water supply continues inadequate.

SNOWFALL

The month was one of light snowfall in practically all parts of the country, and the depths on ground at various times during the month and at the end were mainly less than normal, in fact over large areas in the central valleys and eastern districts the total fall was the least ever known in February. The amounts in the western mountains were also very generally less than usually falls.

At the end of the month material depths were confined to northern New England, the Lake Superior region and thence westward to North Dakota, and the higher elevations of the western mountains. The outlook at the end of the month for a satisfactory supply of water for the dry season in the Western States dependent upon the stored snowfall in the mountains, continues mainly satisfactory over the Northern and portions of the Central States, but remains fair or poor to unsatisfactory to the southward.

HUMIDITY AND SUNSHINE

The lack of precipitation during the month was reflected in the average relative humidity, which was mainly below normal from the Mississippi River westward, and largely so from Louisiana and Texas northwestward over the Great Plains, Rocky Mountain and Plateau districts to the Canadian boundary. East of the Mississippi River the averages above and below normal were about equally divided, though apparently not materially influenced by the distribution of precipitation.

The month as a whole had much clear weather over the central and southern districts, and in practically all districts sunshine was probably more abundant than is usually the case for a winter month.

SEVERE LOCAL HAIL AND WIND STORMS, FEBRUARY, 1925

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Troup, Tex.	1					Moderate hail	Considerable damage reported	Official, U. S. Weather Bureau.
Butte, Mont. (near)	6	A. m.				High wind	Buildings damaged; fences blown down	Do.
Mulberry, Ark.	8	9 a. m.	150		$20,000	Small tornado	Details of damage not reported	Do.
Cairo, Ill.	8					Thunderstorm	Power house of traction company struck by lightning; all light and power service suspended.	Do.
Settle, N. C.	11	9–10:30 a.m.				Heavy hail	Character and amount of damage not reported	Do.
Baton Rouge, La. (3 miles north of).	16					do	Minor damage resulted	Do.
Castalian Springs, Tenn. (near).	16				5,000	Thunderstorm	Barn and contents destroyed by lightning	Do.
Pooleville, Okla.	21	9 a. m.	100		60,000	Tornado	One person injured. Greater part of damage in oil fields.	Do.
Loco, Okla.	21	7:30 p. m.		1		do	Five persons injured. Several homes and other small buildings completely demolished.	Do.
Henryetta, Okla.	21	11:15 p. m.	66		15,000	do	Two persons injured; some property loss.	Do.
Northern California.	22					High winds	Communication and power lines damaged	Do.
San Francisco Bay, Calif.	22					do	Small craft damaged	Do.
Dallas, Tex., and vicinity.	22	12:22 a. m.				Thunderstorm	Considerable property damage; 5 persons injured.	Do.
Crescent City, Calif.	23	A. m.				Violent wind	Several buildings wrecked	Do.
Charlotte, Tenn. (near)	23					Wind	One home razed; other property damage; 2 persons injured.	Do.